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Co-evolution, Opportunity Seeking and Institutional Change: Entrepreneurship and the Indian Telecommunications Industry, 1923-2009

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Abstract

In this paper, we demonstrate the importance for entrepreneurship of historical contexts and processes, and the co-evolution of institutions, practices, discourses and cultural norms. Drawing on discourse and institutional theories, we develop a model of the *entrepreneurial field*, and apply this in analysing the rise to global prominence of the Indian telecommunications industry. We draw on entrepreneurial life histories to show how various discourses and discursive processes ultimately worked to generate change and the creation of new business opportunities. We propose that entrepreneurship involves more than individual acts of business creation, but also implies collective endeavours to shape the future direction of the entrepreneurial field.

Keywords: co-evolution, discourse, entrepreneurial field, entrepreneurship, Indian business, institutions, opportunity seeking, telecommunications

Introduction

In this paper, we demonstrate the importance of history to entrepreneurship in the rise to prominence of the Indian telecommunications industry, and consider the implications for entrepreneurship theory and future research. We introduce and build upon the concept of the *entrepreneurial field*, defined as *a culturally bounded community of entrepreneurs and associated elite actors distinguished by the co-evolution of institutions, practices, discourses and cultural norms*. The essential ideas embodied in this definition are threefold. First, entrepreneurial opportunities are never conceived purely through abstraction, but invariably emerge from, and are conditioned by, the particularities of *context and communities*; themselves the product of historical processes that are both limiting and enabling. Second, when specific entrepreneurial opportunities emerge, they are structured conceptually and practically by rules, regulations, practices and a myriad of interrelationships. Third, within

the entrepreneurial field, the governing *institutions* (rules of the game), firms and individual actors shape and are shaped by one another as they mature in a process known as *co-evolution*. We argue that to understand entrepreneurship and opportunity seeking fully, one must first understand how entrepreneurial fields emerge and develop. Following North, we believe that it is ‘the learning embodied in individuals, groups, and societies that is cumulative through time and passed on inter-generationally by the culture of a society.’¹

Our general purpose is to counter the tendency to conceive of aspects of the entrepreneurial process in isolation, such as how governments shape competition, regulate industries and structure opportunities; or how individual entrepreneurial traits and cognition animate entrepreneurial behaviour. Instead, we think of ‘men in relation to that other kind of things, customs, habits, ways of acting and thinking; accidents and misfortunes’ and how the ‘ensemble of institutions, calculations and tactics’ emerge and co-evolve.² We analyse the processes at work through a study of the Indian telecommunications industry since the formation of the Indian Radio Telegraph Co. in 1923. In this we build upon the work of authors like Jones, writing on the American film industry, and Huygens *et al.*, writing on the music industry, who conclude that co-evolution is integral to the entrepreneurial process.³ We lend further support to the conclusion reached by Van de Ven that ‘the process of entrepreneurship is a collective achievement requiring key roles from numerous entrepreneurs in both the public and private sectors’.⁴

In what follows, we address three related questions. What discourses have shaped the indigenous entrepreneurial field in India, and the entrepreneurial opportunities created in telecommunications? How were entrepreneurs shaped by the entrepreneurial field, and how in turn have they shaped the entrepreneurial field? And how did the institutional, practice, discursive and cultural domains structuring the entrepreneurial field co-evolve between 1923 and 2010? The article divides into six main sections. We first consider the literature on co-

evolution and propose our own conceptual model of domains and interactions within the entrepreneurial field. The following section details our sources and method. The next three sections are empirical. Applying our conceptual model as an analytical tool, we examine co-evolution within the indigenous Indian entrepreneurial field, with particular reference to telecommunications, across three periods: pre-independence, 1923-1947; post-independence, 1947-1991; and post-liberalization, 1991-2010. We focus on the entrepreneurial life journeys of three champions of Indian business: Sir Purshottamdas Thakurdas in the pre-independence period; Satyanarayan Gangaram (Sam) Pitroda in the post-independence era; and Sunil Bharti Mittal following liberalization. In the final section, we draw together the threads of our argument, summarize our findings, and provide answers to the research questions posed in the article.

Co-evolution and the entrepreneurial field

The co-evolutionary perspective highlights the deficiencies of the neoclassical micro-economic firm as a bounded entity operating within market constraints; and, while more recent conceptualizations such as transaction cost economics recognize firms and markets as alternative governance structures, the relational and culturally-rooted characteristics of firms largely remain ignored. An alternative approach is to acknowledge that firms exist relationally and think in terms of ‘the never-to-be-completed process of making firms and markets’⁵, which is radically distributed and decentred.⁶ Likewise, much of the literature on opportunity seeking over-emphasises agency and under-emphasises co-production, formative processes, cultural context and social networks.⁷ However, as previous historical studies have confirmed, formative experiences have a significant impact on entrepreneurial careers and business creation.⁸

There are important implications for the study of entrepreneurship. It may be that often there are personal reasons why one actor capitalises on an opportunity and others do not, but entrepreneurial fields are never created or developed by lone individuals acting in isolation. Rather, they are the product of the collective efforts of numerous actors, entrepreneurs and fellow travellers, played out over relatively long periods of time. We may applaud the achievements of those rare individuals who tenaciously pursue novel ideas, living with uncertainty and risk before achieving success, but less celebrated entrepreneurs, politicians, technocrats, lawyers, opinion formers, academics and managers also play their part in shaping entrepreneurial fields. We concur with Dimov that ‘every single entrepreneur [in the broader sense] offers a fascinating story interweaving personal aspirations and social context. These stories offer a rich ground for identifying meaningful patterns’.⁹ The existence and particularities of institutions, or on occasion institutional voids (weak or incomplete institutional settings), are important antecedents to entrepreneurial activity, especially in calibrating incentives and sanctions. These institutions are subject to co-evolution, as actors of various hues, individually and in coalitions, seek leverage within the entrepreneurial field. Following Lopez-Morell and O’Kean, we believe that rather than simply detecting business opportunities in a Kirznerian sense, entrepreneurs additionally ‘influence governments [other actors, firms and institutions] so that business opportunities appear to be derived from regulation which they themselves have, in one way or other, helped to design’.¹⁰

Our theoretical perspective is informed by discursive and institutional theories. We develop a model that draws on the notion of ‘field’ which brings together institutions, organizations and individuals. As Beckert concludes ‘networks, institutions, and cognitive frames are irreducible and... one important source of market dynamics stems from their interrelations’, and ‘actors gain resources from their position which they can use to influence institutions, network structures, and cognitive frames’.¹¹ Similarly, Lim *et al.* demonstrate

that entrepreneurial cognition is shaped by institutional context which in turn impacts on new venture creation.¹² Entrepreneurs and firms step in to create economic growth when blessed with supportive institutions or on occasion the existence of institutional voids.¹³ The aim is to bring ‘human agency into the study of institutional change’ and develop a framework that integrates institutional theory and institutional economics.¹⁴

The model represented in Figure 1 maps, at a generic level, the social forces bearing upon activity and conduct within the entrepreneurial field. The model has two dimensions, giving rise conceptually to four domains (institutional, practice, discursive and cultural) which interact one with another, resulting in continuity, through self-reinforcement and change, as perturbations in one domain engender sympathetic movements across the system. The proposition here is that change, whether fast or slow, will be path dependent and likely to preserve the distinctive features of the entrepreneurial field. The first dimension is drawn on an axis which, in the language of institutional theory, distinguishes between formal ‘rules of the game’ and ‘informal constraints’.¹⁵ By ‘formal’ we refer to the governing institutions (laws, regulations, policies and standards) and the discursive processes (social, political, legislative and media) through which these institutions are created, modified and sometimes superseded. By ‘informal’ we refer to the unwritten conventions that stem from shared convictions, beliefs, values and assumptions that are expressed in practice in business norms, expectations, conduct and professional standards.

The second dimension is drawn on an axis which distinguishes between social forces that operate in the foreground and those operating in the background. In the foreground, entrepreneurs need to understand the rules of the game, what is permissible and what is not, and, in order to get things done, they must conform to business practices deemed legitimate by other actors within the field. In the background are the discursive and cultural social forces which must be recognized and drawn upon when entrepreneurs seek to modify to advantage

the institutional and practice domains. Dramatic events and technological breakthroughs may, of course, serve as triggers for multiple changes within the entrepreneurial field through the initiation of social movements that embrace new discourses. Rather than viewing these discontinuities as exogenous shocks to the system, entrepreneurs demonstrate an engaged practical rationality rather than a dispassionate scientific rationality.¹⁶

[FIGURE 1 ABOUT HERE]

Our model, we believe, provides the basis for a fresh understanding of entrepreneurship as a collective accomplishment. In what follows, we focus in particular on discourses and social movements of significance to the historical emergence of the contemporary telecommunications industry in India. We use discourses, exemplified through the life histories of three leading telecommunication pioneers, to open windows on the formation of the entrepreneurial field during three related historical eras. Emphasis is placed upon collective achievements of individual and corporate actors. Without the collective effort made to create, shape and manage the entrepreneurial field, there would not have been opportunities for future telecommunications entrepreneurs to seek, but rather ‘entrepreneurs without enterprises’.¹⁷ The model is used to analyse the processes of co-evolution and positive feedback loops identified by Levinthal and Myatt as fundamental to business creation, demonstrating how the past, communicated through institutional, practice, discursive and cultural forces, imposes itself upon the present¹⁸; the impact of history being ‘both enabling and constraining’.¹⁹

Research process

We divide our narrative into three sections. First, we identify the fundamental characteristics and formative processes at work within the indigenous entrepreneurial field in pre-independence India (1923-1947), drawing upon the India Office Records and Private papers

held by the British Library and Moraes' biography of Sir Purshottamdas Thakurdas. Second, we consider the constraints upon the entrepreneurial field in post-independence telecommunications (1947-1991), and how the discourse of technology for development helped galvanize the forces of economic reform. Our account is informed by the papers of key players in the policy arena and Chhaya's insightful biography of Sam Pitroda.²⁰ Third, we chart the rise to prominence during the post-liberalization (1991-2010) era of a new breed of telecommunications entrepreneurs drawing in particular upon four life-history interviews conducted with senior executives of Bharti Airtel, the leading private Indian telecommunication company, and published interviews with Sunil Bharti Mittal, founder of Bharti Enterprises. This is more than a story of state-induced change, but one in which the entrepreneurial community found its voice, instilling shared mental models of business venturing and technological foresight. Informing our approach is North's recognition that institutional theorists have tended to leave 'entrepreneurs out of the analysis' by focusing 'on the rules of the game rather than the players', ignoring 'the purposive activity of human beings to achieve objectives which in turn result in the altering constraints'.²¹ Acknowledging this, we focus on the careers of three individual agents and the discourses they helped shape, but without losing sight of the collective endeavour, the formation of the entrepreneurial field, in which they were engaged. We pursue the life-history approach which allows us to bring into relief the connectivity of institutions, organizations and individuals.²²

Indian enterprise under Empire (1923-1947)

Markovits holds that 'the birth of a modern industry in the context of colonial India ... represented a remarkable and perhaps a unique feat of entrepreneurship'.²³ Indigenous enterprise may have been constrained by British hegemony, limited domestic purchasing power, and the rigidities of caste and traditional culture, but there was sufficient flexibility in

mindsets and practices for Indian business to embrace the potentialities of mass production and new technologies.²⁴

The indigenous business community, which conspicuously grew in confidence between the end of World War I and Independence in 1947, might best be described as polymorphic, with many divisions based on race, caste, religion and province. It would be mistaken to think of the Indian business elite as united by common values or objectives. Yet, within diversity, there were commonalities and lines of development that ultimately proved transformational.²⁵ Most important was the tendency of the largest firms to become progressively more dominant. Markovits reports that by 1931, 60% of the combined paid-up capital of joint-stock companies was controlled by just 81 firms, of which 30 were Indian and 51 British.²⁶ Brimmer, after surveying 17 industries in 1952, concludes that managing agencies came to account for the greater part of production and sales in coal, shipping, cement, jute, cotton, engineering and metals, electrical power, vegetable oils and planting (coffee, rubber and nuts).²⁷ Of 1,427 operating companies identified, 62% were controlled by the top 120 agencies. At the other end of the spectrum, there were 404 agencies controlling a single company, but these like their more illustrious counterparts drew upon the same limited pool of directors when constituting boards. The holding of multiple directorships by members of the elite soon became one of the defining features of corporate governance in India. The managing agencies, and the handful of entrepreneurs at their helm, by controlling voting rights and board memberships, were able to exert leverage within the Indian economy disproportionate to the capital they directly invested.²⁸

At the core of the business system were members of the industrial elite who controlled the pre-eminent managing agencies and sat on the boards of the largest operating companies. The career of Sir Purshottamdas Thakurdas (1879-1961), who held more than 60 directorships in the 1930s and 1940s, is illustrative.²⁹ Thakurdas was born into a Gujarati

bania family based in Bombay (modern-day Mumbai). The Gujarati *baniyas* were moneylenders, merchants and traders.³⁰ His parents died when he was young, and he was brought up by his uncle. Thakurdas enjoyed all the privileges of an elite lifestyle, spoke English as his first language, and was educated at the exclusive Elphinstone College. After training as a lawyer, he joined the family business, Narandas Rajaram & Co., aged 22, and became a partner six years later in 1907. He was a prodigious networker within the British and Indian business communities; Narandas Rajaram becoming the first Indian firm to be accepted into the British-dominated Bombay Chamber of Commerce. Thakurdas quickly rose to be one of the key players in the international cotton trade. With his reputation secured as ‘King Cotton’, others saw benefit in association and he was invited to join the boards of leading companies like the Tata Iron & Steel Co. (TISCO). His legal training, cultivated intelligence and fluency as a public speaker brought him to the attention of the British establishment and the leadership of the Indian nationalist movement. He entered the political fray following election to the Bombay Legislative Council, which became the Bombay Legislative Assembly following the passage of the Government of India Act of 1919.

The stage was set for Thakurdas and others within the Indian business elite to make their mark. They were in effect formative agents for change embroiled in discourses that reached beyond business into the *field of power*, the integrative domain in which elite actors from different fields – politics, academia, law, civil administration and business – come together in pursuit of collective agendas.³¹ In India, the power struggles waged before Independence were played out within the master struggle between British imperialism and Indian nationalism.³² Indian business leaders may not have been the driving force behind political change, but with the future direction of the nation in question many of their number, including Thakurdas, allied themselves with the Indian National Congress, which under the leadership of Gandhi and Nehru grew progressively in strength during the 1920s to exact

complete independence in 1929. The overriding objective of pro-Congress business leaders, through discourse and direct involvement in the politics of transition, was to nurture entrepreneurialism and business growth in India, resisting as a matter of utmost priority the forces of socialism and extremism within Congress. This involved steering a course between continued collaboration with the British and participation in the freedom movement, and in doing so they made a lasting contribution to the entrepreneurial field in India.

The logic and dynamics of the unfolding situation are modelled in Figure 2. This is focused on three critical discourses and related developments within the institutional field. These developments were supported by, and impacted upon, contemporaneous movements in the domains of culture and practice. The first critical discourse is that of *economic nationalism*. One of the main attractions for business of political freedom was the desire to protect Indian firms from international competition:

Connected ultimately with the question of industries is the question of the Indian tariff ... The theoretical free trader, we believe, hardly exists in India at present ... Desiring industries which will give him Indian-made clothes to wear and Indian-made articles to use, the educated Indian looks to other countries which have relied upon tariffs, and seizes on the admission of even free traders that for the nourishment of infant industries a tariff is permissible.³³

Economic nationalism was the natural counterpart of political nationalism, and its cause was taken up enthusiastically by Thakurdas and his allies. In 1924, when TISCO faced severe financial difficulties due to competition from Belgian steel, he was spurred into action, making personal representations to Lord Reading, the Viceroy, to push for protection.³⁴ His arguments were received sympathetically and communicated to London:

... it is impossible to decide the issue at stake on purely economic grounds ... we must also take into consideration the immensely strong sentiment in favour of protection of the steel industry which is almost universal amongst educated Indians. Tata Iron and Steel Company is regarded as a great industry of vital national importance, which has been brought to its present stage by Indian enterprise and under

Indian direction, and deep feelings of national pride and national sentiment are involved in the preservation and development of that industry.³⁵

In response, the British government constituted the first Indian Tariff Board (ITB) to examine the case, and as a gesture of conciliation the British accepted the recommendations of ITB and ‘with it, an era of free trade formally drew to a close and a new protectionist era was formally inaugurated’.³⁶

[FIGURE 2 ABOUT HERE]

The same powerful sentiments were evoked with respect to other proto-modern industries like telegraphy, perceived as fundamental to economic development. In the early 1920s, as the potential of wireless telegraphy to improve communications became apparent, there ensued an intense debate on the best means of exploiting the new technology. Following the Report of the Imperial Wireless Telegraphy Committee in 1924, the Post Office assumed responsibility for coordinating and controlling services throughout the British Empire, while national ventures had the opportunity to cater for internal traffic and relay internationally.³⁷ The Indian Radio Telegraph Company (IRT), founded in 1923, was the vehicle established to exploit the potentialities of the Indian market, with the vision of providing a fast, efficient, all-India telecommunications service. Thakurdas, as one of the champions of Indian economic development, joined the IRT board, carefully constituted to represent both British and Indian business communities. He continued in role following the merger of IRT with rival cable interests in 1932 to form Indian Radio and Cable Communications Ltd (IRCC). As with IRT, IRCC was largely dependent upon the British Marconi company, which operated the London end of the network, for its technology and personnel. Recognising the resource and knowledge asymmetry between Marconi and IRCC, Thakurdas championed investment in local skills and capabilities, promoting IRCC as a truly Indian telecommunications enterprise. For example, he sent Mr S.R. Kantebet to the Marconi

training programmes in the UK. From a technical assistant, Mr Kantebet went on to become the first Director General of the nationalised Overseas Communications Service (OCS) in 1947.³⁸

The second critical discourse identified with Thakurdas and his Congress allies is that of *representative institutions*, free from British control, which might better promote Indian business interests. This is best exemplified by the alliance forged between Thakurdas and G.D. Birla, head of one of the leading Indian industrial groups, to form the Federation of Indian Chambers of Commerce and Industry (FICCI) in 1927. Their alliance united the Indian business community, identifying it more tangibly with the Indian freedom movement, drawing together the two strongest business communities of Bombay (Thakurdas and the Tatas) and Calcutta (Birla and the Goenkas) to create an all-India business forum independent of colonial interests. The vision, presented by Birla to Thakurdas as early as 1923, was to stand up to the British and speak with one voice:

It would be a great glory to see merchants from all parts of India standing on one platform and putting their well considered and combined views before the Government with a force which will carry greater weight than those of the combined European institutions.³⁹

The FICCI, Piramal concludes, in bringing together representatives from Bombay, Karachi, Madras, Bangalore, Kanpur, Ahmedabad and Burma, strengthened the hand of Indian business and helped shape government policy before and after Independence.

The third of the critical discourses identified with Thakurdas is that of *national self-determination*. Thakurdas's approach to achieving self-government was to maintain pressure on the British, through an astute combination of dialogue, cooperation and contestation, to deliver on the promise of staged reform issued in the preamble to the 1919 Government of India Act. This is evident in his correspondence with Gandhi, a relative by marriage and member of the same caste and community, between June 1915 and March 1946.⁴⁰ The

British, for their part, understood and respected his position, as the Viceroy acknowledged with reference to the pledge of 1919 that ‘on this point all Indians are full of suspicion, and this factor runs right through Indian politics’.⁴¹ He went on to support Thakurdas’s appointment to the Royal Commission on Indian Currency and Finance established in 1926, against the initial wishes of the Secretary of State for India, Lord Birkenhead, even though it was understood that he would press the case for a low rupee-to-pound fixed exchange rate to advantage Indian industry: ‘... if Sir Purshotamdas were excluded there would be no Member of the Assembly on the Commission, and although, if he were to write a Minority Report on his own, the fact of his membership of the Assembly would be of no assistance in securing the Assembly’s support to a different point of view’.⁴² In other words, Thakurdas’s appointment to the Commission lent legitimacy to a process over which he could hold little sway. In the event, he produced the predicted minority report, which at least solicited the approbation of Gandhi: ‘Last week I finished reading the Royal Commission’s report. I was very happy to read your minute ... from a distance I watch with admiration your fight’.⁴³ Gandhi came to rely upon Thakurdas’s opinion on industrial matters, playing an important role at successive Round Table Conferences at which he represented the Indian business elite.

The three discourses outlined above were part-and-parcel of a complex social movement that aimed to free India from British control.⁴⁴ They represented a distinct strand within the freedom movement, opposed to extremism and committed to economic development. They can also be seen as formative to a degree, of new institutions, business practices and cultural sensitivities, which themselves were changing independently in response to historical forces. The post-independence legacy was an entrepreneurial field distinguished by protectionism, politically astute leadership, robust and distinctive business cultures, elitism and the concentration of industrial power.

Cultivating the entrepreneurial field post-Independence (1947-1991)

The economic history of post-independence India is often dismissed as an era of insular, socialistic, state-dominated, centrally-planned development that delivered modest rates of economic growth *per capita* punctuated by periodic economic crises. The unfairness of this assessment is that it fails to take account of the dislocation and disruption that followed Independence and partition, and the deep-seated problems of a still predominantly agrarian economy.⁴⁵ It is misleading because it loses sight of the private sector, of the entrepreneurs and business leaders who continued throughout the post-independence era to hold considerable sway over provincial and national policies.⁴⁶ It is more accurate to think of India under the premierships of Nehru (1947-64) and his daughter Indira Gandhi (1966-77 and 1980-84) as a mixed economy governed by politicians and members of the elite who periodically contested, adjusted and affirmed responsibilities and rules of engagement between the State and business.⁴⁷

In the first decade after Independence, the precise details of the settlement between the State and business were resolved through dialogue between the Nehru government and the Indian business elite represented by FICCI, which in return for its support expected government to promote the interests of Indian business through the exercise of positive discrimination (tariffs, regulations, licenses etc).⁴⁸ Industries included in schedule A of the government's policy statement of April 1956, 17 in all, were assigned to the State; those in schedule B, a further 12, were projected to have State participation in new ventures; and the remainder in Schedule C fell solely within the private sector.⁴⁹ However, India faced a foreign exchange crisis in 1957, and under pressure from FICCI at home and governments and international agencies abroad, industries were de-listed and opened up to the private sector, including foreign firms. The government of India may have placed considerable faith

in planning as a tool for nation building, but it never broke faith with the business elite.

Meanwhile, the discourse of *economic reform* began to grow in strength, and during times of economic crisis – including 1960-62, 1966-68 and 1985-87 – it loomed large as a response to the international community's demands for reform.⁵⁰

In telecommunications, the IRCC and other companies were nationalized at Independence to form a government-administered monopoly known as the Department of Posts and Telegraphy (P&T), under which the IRCC was renamed the Overseas Communication Service (OCS). The original objective was to provide the nation with a modern communications infrastructure, building on the established telegraph network and the small but developing network of 84,000 telephone lines servicing a population of 350 million. In this ambition, the government of India and the P&T monopoly failed badly, manifesting all the weaknesses that plagued India's State-run industries during the half century following Independence. As late as 1980, the Indian telephone network had grown to a modest 2.5 million lines servicing a population of 700 million, with just 3% of India's 600,000 villages connected to the network.⁵¹ In effect, the government succeeded in creating a large telecommunications organization if measured by number of employees, but a small one if measured by output. For the Congress Party, providing secure jobs in the public sector became a means of winning favour and garnering political support, while its social equality agenda meant bolstering employment in the public sector.⁵² Many thousands of low-paid jobs were created for the socially marginalized 'backward' castes.⁵³ The upper echelons of the service were the preserve of a small minority of highly-educated engineers, while the vast majority constituted a small army of low-skilled, highly unionized workers. Frustration with poor service and scarcity of telephones mounted over the years. By the mid-1980s, the waiting list for telephones was around 1 million, rising to more than 3 million by the 1990s; a situation which created opportunity for widespread bribery and corruption.⁵⁴

These failings were conspicuously at odds with the *nation-building* discourse espoused by the ruling Congress Party, and the public became ever more vociferous in demanding change.⁵⁵ There was widespread recognition that improved telecommunications went hand-in-hand with economic development.⁵⁶ Policymakers for the first time began actively to look for opportunities to accelerate improvements to the network.⁵⁷ Telecommunications became a national priority in the seventh national plan (1985-90). Shortly after, the monolithic P&T was divided to create the Department of Telecom (DoT), Mahanagar Telephone Nigam Limited (MTNL) providing services in Mumbai and Delhi, with Videsh Sanchar Nigam Limited (VSNL), formerly the OCS, providing international services. A new Telecom Commission was created in 1989 to develop policies and coordinate operations. The business community encouraged and welcomed these initiatives. The dominant enterprises of the pre-Independence era had grown more powerful under the protective wing of the State, and could now see fresh opportunities in technologically-sophisticated industries like telecommunications. However, the forces of resistance, notably managers within the DoT and their trade-union allies, remained obstructive and intent on slowing the pace of change.⁵⁸

It is at this juncture that the US-Indian telecommunications entrepreneur, Sam Pitroda, first made his mark in championing the discourse of *technology for development*. Born in 1942 in Orissa to a Gujarati family, Pitroda read for his undergraduate and master's degrees in physics and electronics in Vadodara before taking a master's in electrical engineering at the Illinois Institute of Technology, progressing to applied research in telecommunications and hand held computing. He invented the revolutionary 580 DSS digital switch, and in 1974 founded Wescom Switching to exploit the technology. The company was sold to Rockwell International in 1979; Pitroda received \$5 million for his shares, and joined Rockwell as executive vice-president. In 1984, he was invited by Indira Gandhi to return to

India to advise her government on telecommunication, and has since divided his working life between Chicago and Delhi.

On returning to India, Pitroda founded the Centre for Development of Telematics (C-DOT), an autonomous research and development organization operating at arms-length from government through which he aimed to mobilize the Gandhian discourse of self-sufficiency for the masses, declaring telecoms ‘the great social leveller ... second only to death’.⁵⁹ He stood out from the crowd in India because of his experience in the US, and soon became the champion of nation building through economic modernization. India, he argued, must embrace the potentialities of technology and adapt its culture and values to meet the challenges of the global age. The juxtaposition of life in Chicago with that in Delhi shocked him personally and sharpened his sense of being a man of destiny:

Living in the United States for the most productive years of my life had altered my values and perceptions beyond recognition. My approach to business, and for that matter to life, had become performance oriented. But every few weeks I left Chicago for New Delhi and a set of standards and values that were feudal, hierarchical, and complex beyond belief.⁶⁰

Pitroda’s performance orientation influenced the work culture of C-DOT. He set up ‘an American work environment’ and instilled ‘a bias towards action, teamwork, risk, flexibility, simplicity, and openness’.⁶¹ He insisted on isolating C-DOT from the values and norms of other government-funded technology centres; the organization being ‘vested with total authority and flexibility outside Government norms, to ensure dynamic operations’.⁶² Free from normal restrictions and with consistent political support from Prime Minister Rajiv Gandhi (1984-89), C-DOT was able to exert unrivalled influence on Indian mindsets regarding telecommunications and development.⁶³ Two contributions stand out. First, C-DOT was the inspiration behind the introduction and rapid spread across rural India of manned public call offices (PCOs) with their distinctive yellow boards and the PCO/STD sign, greatly increasing network access and utilization and involving tens of thousands of small-scale

entrepreneurs in the telecommunications industry. Second, C-DOT technology has been the platform for the development of digital fixed-line exchanges manufactured in India to suit local conditions such as ‘extreme variation in temperature and humidity, lack of reliable electricity supplies, and a heavy traffic load’⁶⁴; at first meeting the need for low-capacity rural exchanges but progressively increasing in scale and sophistication to meet all demands. C-DOT claims that by 2010, 50% of Indian network capacity was supported by its technology, and that in the process it had spawned a large-scale indigenous high-technology revolution.⁶⁵

Pitroda’s role in the development of the Indian telecommunications industry is not that of an entrepreneur, classically conceived. His five-year stint at C-DOT was unpaid, his stated motivation being to engage in *world making* rather than money making.⁶⁶ in his own words, ‘whatever I was doing was part of nation-building, I was not building a company; it wasn’t personal. It was a more romantic vision, to transform people’s situations’.⁶⁷ He became chairman of the newly-created Telecom Commission in 1989 to deliver on the technology for development mission. He resigned in 1991, having suffered a heart attack the previous year. Accusation of corruption surrounding C-DOT, all unproven, led him to retreat for a while to the US, though he returned centre stage in 2004 when government appointed him Chairman of the National Knowledge Commission think-tank. Pitroda’s example demonstrates how the entrepreneurial field can be shaped by the interventions and discourse of individuals operating at the highest level within the field of power.⁶⁸ Having a public interest remit enabled him to engage in enriching the entrepreneurial field without direct participation. C-DOT effectively broke the State telecommunications monopoly by overcoming the resistance of the DoT to rural enterprise. Equally, he brokered the deals that led Indian companies to manufacture equipment designed by C-DOT, campaigning actively for the award of contracts to domestic manufacturers using C-DOT technology under license

in preference to importing French equipment manufactured by Alcatel.⁶⁹ As Chowdary concludes, ‘the brief Pitroda episode decisively established that Indian private sector companies can successfully and ably take on telecom manufacture and that given a chance, they could quickly and decisively breach the DoTs monopoly in every sector’.⁷⁰

The changes wrought within the entrepreneurial field in the 1947-91 period that gained impetus in the mid-1980s, inspired by significant actors like Pitroda, paving the way for the telecommunications revolution, are synthesized in Figure 3. The emphasis here is on complexity and paradox. Change within the domain of discourse ran ahead of changes elsewhere within the entrepreneurial field. This is unsurprising. Those in positions of power and influence were best placed to see the shortcomings of the immediate post-Independence settlement, and responded by reinventing the concept of nation building, away from social equality towards the stimulation of economic growth and development. Economic reform and embracing new technologies were billed as crucial to achieving the goals of heightened productivity, increased international competitiveness and rising living standards. These discourses were powerful enough to promote change, but not transformation within the other domains in the entrepreneurial field. Within the cultural domain, national pride was stimulated, and it became accepted across a broad swath of society that entrepreneurialism and openness should be encouraged without losing respect for traditional values. Within the domain of practice, nation building translated into favouring Indian enterprises, continuing the pact between the State and business and accepting corruption as a fact-of-life, while welcoming collaboration with foreign firms involving inward technological transfer. Within the institutional domain, the landscape was enriched through the creation of dynamic new bodies like C-DOT and the weakening of traditional monolithic structures. The scene was set for the surge in entrepreneurialism of more recent times.

[FIGURE 3 ABOUT HERE]

Liberalization and the entrepreneurial revolution (1991-2009)

The speed and far-reaching nature of economic liberalization beginning in July 1991 under Prime Minister Narasimha Rao and still on-going, signals a marked departure from the past and the inauguration of a new economic era in India: tariffs barriers have been slashed, currency controls dismantled, capital market restrictions removed, an open-trading national stock exchange introduced, majority foreign ownership of Indian-registered companies permitted, industrial licensing pruned back, regulations simplified, equity markets opened up, and state monopolies progressively broken up through privatization.⁷¹ The seeming effect has been to move India from the economic slow lane onto the global super-highway of rapid economic growth, performing almost as well as China over the past decade.

The *proximate* cause of liberalization in India post-1991 is obvious enough. Over the course of the preceding year the country had suffered a sharp downswing in its international balance of payments position, and in the ensuing crisis was forced to liquidate gold reserves and seek assistance from the International Monetary Fund. Fiscal orthodoxy and the liberalization of trade and foreign direct investment were the price of international financial support. However, the *ultimate* cause of sustained liberalization must lie elsewhere, as invariably in the past the forces of reaction had brought policymakers to retreat rather than intensify their efforts at reform. The monumental policy shift of 1991 was made possible by earlier social, cultural and ideological changes which were accelerated and generalized by the reform process itself.⁷² India witnessed a quiet entrepreneurial revolution during the 1980s, which saw the growth of numerous small and medium-sized companies exploiting the technology of foreign firms under license. These firms were outside the control of the conglomerates that had long dominated Indian business. They saw the advantages of a more open regime, and spoke collectively through the Confederation of Engineering Industry, remodelled and re-launched as the Confederation of Indian Industry (CII) in 1992. Collectively,

through the discourses of *liberalization* and *internationalization*, they were able progressively to win over others to see the potentialities for a much more vigorous, liberated, densely-populated entrepreneurial field.

Telecommunications, given the platform established earlier by Pitroda and his allies, was one of the main beneficiaries of post-1991 reform. In the 1990s, new institutions were created to facilitate competition and growth, following the introduction of the New Telecom Policy in 1994 and the creation of the Telecom Regulatory Authority of India (TRAI) in 1996. Indian and foreign companies were encouraged to enter the mobile sector in partnership, initially with foreign firms limited to a 49% ownership stake. The Cellular Operators Association of India (COAI) was formed in 1995. In 2000, the operating monopoly for fixed-line service provision was separated from the government machinery and incorporated as Bharat Sanchar Nigam Limited (BSNL), its international division, VSNL, being privatized two years later when sold to Tata Communications. The Indian market for mobile services was divided into operating circles and licenses sold to private operators on a competitive basis. Under these new arrangements and simplified regulatory environment, the privately-owned mobile companies, often with technological, marketing and organizational support from foreign companies, were able to ratchet up sales dramatically. By June 2010, India had 672 million telephone subscribers, of which 636 million were connected through mobile, making for an overall network density of 57%.⁷³ Growth on this scale was made possible by mass marketing and the active cultivation within India for the first time of a third discourse: *consumer choice*.

The foundation in 1995 and subsequent rise to prominence of Bharti Airtel is the outstanding success story of India's meteoric rise as a global player in telecommunications. It is the flagship company of Bharti Enterprises, the group founded in 1976 by Sunil Bharti Mittal. Born in Ludhiana in 1957, Sunil was one of three sons of the politician Sat Paul

Mittal. He began his entrepreneurial journey aged 19 as a trader and small-scale manufacturer of bicycle parts, and remembers Ludhiana fondly as ‘a very industrious town, where almost everybody is an entrepreneur of some kind. It is the bedrock of small-scale industry, the principal industries being cycles or cycle parts, hosiery, or yarn to make knitwear, and light engineering items’.⁷⁴ Seeking to operate on a larger scale, he moved to Mumbai and began importing ‘a variety of products – steel, brass, zinc, zip fasteners, plastics – and eventually bought India's first portable generator’.⁷⁵ His business stock rose following a chance meeting with ‘a harassed Japanese salesman in the capital’s Bengali Market’.⁷⁶ This introduced him to the Japanese manufacturing giant Suzuki, and his first great achievement was to win the trust of such a large, prestigious organization. In his own words:

Large companies intuitively don’t ally with small companies or entrepreneurs. So, one had to persuade these large companies, assure them that they needed to be in the Indian market. We also had to convince them that we had a high governance structure despite being a small company, and give them the comfort to join hands with us to exploit and come into the Indian market together.⁷⁷

Suzuki’s decision was vindicated when Mittal ‘created the consumer genset market and in no time at all was the largest importer of Suzuki generators in the whole world’.⁷⁸ This success, and the reputational benefits it conferred, enabled Mittal to take advantage of other entrepreneurial opportunities.

However, when the government invited bids for mobile licenses in 1994, the Delhi-based Bharti group was still a relatively small private-sector player within the Indian context, dwarfed by dominant groups like Tata and Reliance. It is the entrepreneurial breakout from relative obscurity that lends the Bharti Airtel case its fascination. Within just 15 years from incorporation, the company has acquired 200 million mobile subscribers worldwide; the largest Indian provider of telecommunications services, with 143 million mobile subscribers, 29% of the mobile market, providing landline and broadband services in 94 cities.⁷⁹ The Bharti group’s involvement in telecommunications began in the 1980s, when, as one of the

medium-sized technology companies of the ‘quiet entrepreneurial revolution’, it began manufacturing push-button telephones under license from Siemens. Bharti Telecom Ltd. (BTL) was formed in 1986 ready to take advantage of predicted growth in the Indian market, inspired in part by technology for development discourse, Rajiv Gandhi’s reforms, and Sam Pitroda’s launch of C-DOT.

Mittal was a ‘first mover’, but it was not until the announcement of the New Telecom Policy in 1994 and the invitation to bid for mobile operator licenses in 18 circles across India that significant opportunities presented themselves. Mittal was quick to see the possibilities, as Interviewee 1 recalled:

Then, in 1994, when these licenses were being given for telecoms, that was a time when we both met and decided why don’t we come together ... there was a chance of creating something exceptional, although we had no idea that at that time we could never imagine that it would become this big ... He [Sunil] said ‘I think if we two come together we’ll put this industry on fire’.⁸⁰

Another close associate, and senior executive, confirms this assessment of Mittal as a man blessed with foresight:

Sunil was an entrepreneur to make good decisions. He had very good vision. Good long-term thinking and he delegated a lot ... I think it was his vision and drive to take in professionals is what made the difference, compared to many other Indian companies.⁸¹

It would be mistaken, however, to overstate the importance of vision as an explanatory variable when endeavouring to explain the rise to prominence of Bharti Airtel. When Interviewee 2 was recruited in 1998, he found a company that was small, with limited technological capabilities and negative cash flow. The key to success, in his view, was to recognize these deficiencies, compensate for them, and build a strong organization notwithstanding. To compensate for a lack of capital and technical knowledge, the decision was taken to concentrate in-house on sales, marketing, customer service and finance while outsourcing infrastructure and business systems to international companies with the requisite resources, as Interviewee 1 explains:

Everybody told us ‘oh, you can outsource only core or non-core activity’, and we were pretty clear, we thought about it and said ‘what the hell is non-core?’ ... There were three questions you had to answer. Who has the better domain knowledge? ... Who can attract better human capital? And the third one was better economies of scale. If the answer to all three is ... somebody else – the choice is very clear ... it’s outsourced. ... I outsourced it [business systems] to IBM because obviously they have better domain knowledge, they attract the most talented people in IT, and they obviously have economies of scale.

Having outsourced core operations, the company could focus on the commercial and financial aspects of the business. The decision was taken early to go for growth by bidding for additional operating licenses, expanding the scale and scope of operations, and in the process to grow the market and market share by offering an outstanding value proposition based on low prices allied to good customer service. In Interviewee 2’s words:

Again, we feel that a very unique business model has developed in India on telecom which is based on low-cost, high-volumes; completely contrary to what the world still does ... When we came into telecom, everybody said ... don’t do pre-paid; post-paid is very good. So, keep the tariff very high, because otherwise the network costs will kill you ... And we completely turned this whole thing on the head and said ... pre-paid is the best because if [the customer] is going to pay small amounts I can’t service him on post-paid ... the only model we can understand in India is let people talk; let there be volumes; let them be as cheap as possible, which means every time volumes go up my costs come down.

When viewed through the lens of Figure 4, the acceleration in the pace of change within the entrepreneurial field in the post-liberalization era is evident, reflected in each of our four domains. The combined ideological weight of the liberalization, internationalization and consumer choice discourses undoubtedly oiled the wheels of widespread institutional change. It also served as a wakeup call, announcing that India, with a vitalized entrepreneurial field, was ready and open for business with the rest of the world. Joint ventures between domestic and leading international firms multiplied and India, in order to integrate more fully with international capital markets, adopted selectively some of the corporate practices prevalent in the western world, recognizing in particular the necessity of improved corporate governance. However, the conglomerate form of enterprise with control vested in the hands of the few remains dominant; and corruption remains a problem, although less tolerated and increasingly

resisted. Alongside these changes and reinforcing them has been a shift in culture towards modernity. At the same time, given the more confident mood prevailing, traditional values relating to family loyalty, respectfulness and inclusivity in personal and corporate behaviour have been re-affirmed.⁸²

Discussion and conclusion

In this article, we have introduced, defined and developed the notion of the entrepreneurial field. This is seen to apply to the specific historical conditions under which entrepreneurs, as individual actors and in communities, operate and pursue change. The entrepreneurial field is bounded variously by legal jurisdiction, state authority and commonalities of race, language, culture and community and maps approximately onto the nation-state. Our objective has been to shift the focus from individualized explanations of entrepreneurship focused upon motivations and behaviours towards entrepreneurship as a collective achievement. In our view, entrepreneurship invariably is a rooted phenomenon that can only be fully understood with reference to context, conditions and historical processes.

The model presented in Figure 1 has been used to organize, simplify and generalize our discussion of complex historical events and processes. The concomitant risk is that the theoretical lens limits what is seen with the result that other explanatory factors are overlooked. Our defence is twofold. First, we argue that our view of the entrepreneurial field is sufficiently wide to capture the big picture but narrow enough to observe details and the connections between people and events. When we observe Thakurdas, for example, our model helps make sense of his seemingly ambivalent attitudes towards the British and Congress, and the precise reasons for his support for Tata and protectionism and the founding of FICCI. Second, we argue that our representation of the entrepreneurial field – the domains of discourse, institutions, practice and culture – is logically sound and empirically well

grounded. The conditions impacting any entrepreneur, as self and as self-in-relation-to-others, boil down to what is thought and discussed (discourse), what is permitted and what is not (institutions), what is observed and transacted (practices), and what is felt and believed (culture). Recognizing this enables us, for example, to read Sam Pitroda's speeches and interviews not as the unique thoughts of an individual, but rather as the typical reaction of an entrepreneur wrestling with an unfamiliar culture, institutions and practices.

How, more precisely, does our model help us answer the research questions posed in this paper? In answer to our first question, we have identified three influential discourses in each of the three eras examined, and have shown how these were related to other domains within the entrepreneurial field. Discourses do not exist in historical isolation. Instead, entrepreneurs draw on historical discourses to envision new worlds and to instantiate them in institutions, practices and culture.⁸³ In the pre-independence era, Thakurdas was embroiled in the discourses of economic nationalism, representative institutions and national self-determination. His efforts helped position Indian business as a progressive, cohesive force, integral to the national project, a source of unity that might in partnership with the State generate economic growth. In the post-Independence era, nation building was at first equated more with socialism than entrepreneurship, although the business community never completely lost the power and influence achieved under Empire. When statist policies began to lose credibility, it backed the discourses of economic reform and technology for development extolled by Pitroda as the best prescription for nation building. His focus on performance helped lay the foundations for private enterprise in telecommunications, providing fresh entrepreneurial opportunities for companies like Bharti Enterprises. In the post-liberalization era, the allied discourses of liberalization, internationalization and consumer choice embraced by entrepreneurs like Sunil Mittal have helped deliver institutional change and rapid economic growth; positioning India as a rising force within the

international economy, well attuned to working in the developing world. Interviewee 1, for example, makes the telling point that Bharti Airtel's low-cost, high-volume model has appeal 'in developing markets which have lesser GDP like India has and which need the same kind of telecom service to touch the masses as we do'.

Our second research question invited consideration of the interplay between entrepreneurs and the entrepreneurial field. On the basis of the evidence presented above, the exchange between them is significant and reciprocal. Thakurdas's familiarity with the British and his informed opposition to the colonial regime are the product of his family upbringing, education, business network, and engagement with the Indian and British social elites. Yet he was not a prisoner of his personal history, and could reflexively critique and oppose the regime and champion alternatives that favoured Indian business, helping to shape developments within the entrepreneurial field. As a partial outsider whose business instincts and dispositions were forged in the US, Pitroda differs markedly from Thakurdas. In the late 1980s, he provided a powerful jolt to the Indian business system, whilst the Indian entrepreneurial field had little impact on him. Mittal, unlike Thakurdas and Pitroda, is a much purer product of Indian business. He never experienced colonialism and was not schooled abroad. His love of deal-making and diversity stem from his formative business experiences in Ludhiana and Mumbai. These are intensely practical dispositions, but Mittal's role models are historical, Indian and dynastic, epitomized by the Tata, Birla and Ambani (Reliance Group) families. His particular contribution to shaping the entrepreneurial field is through championing the discourses of internationalization and consumer choice, taking the gospel of wealth creation to the masses, helping to shape Indian culture to embrace entrepreneurialism and the need to eradicate corruption and espouse international corporate governance norms.⁸⁴

Finally, we asked how and to what extent the four domains within the entrepreneurial field co-evolved between 1923 and 2010. As a general tendency, discourse tends to precede

and outrun changes in the other three domains. This is natural, as discourse is rarely the product of abstraction, but is rooted in everyday realities and fuelled by discontent.⁸⁵ Before Independence, each of the three discourses identified was linked to a greater or lesser extent with the national freedom movement. The British were on the defensive, and tariffs and the formation of FICCI met with relatively little opposition. The struggle for political concessions was a far bitterer struggle. In the practice and culture domains, little changed bar the emergence of a greater sense of national solidarity amongst the Indian elite, suggesting that practices and culture are more resistant to change.⁸⁶ The evidence of later periods would in general support this view. However, it is conspicuous that the dynamics of change within the entrepreneurial field were far more fluid and all-encompassing after 1991. Yet even post liberalization, the practice domain has stubbornly resisted change.⁸⁷ All in all, the evidence on co-evolution is mixed. Major changes in one domain within the entrepreneurial field do not automatically elicit changes elsewhere due to seeming variability in inertial tendencies. We conclude that major changes within the entrepreneurial field are driven in the main through contestation and interactions between elite actors within the field of power in response to systemic crises triggered by external events and internal contradictions. These actors are the principal authors of challenging discourses that frame problems and suggest solutions, which in turn, at differential and unpredictable speeds, leads to changes in institutions, practices and culture.

Figure 1: Domains and interactions within the entrepreneurial field

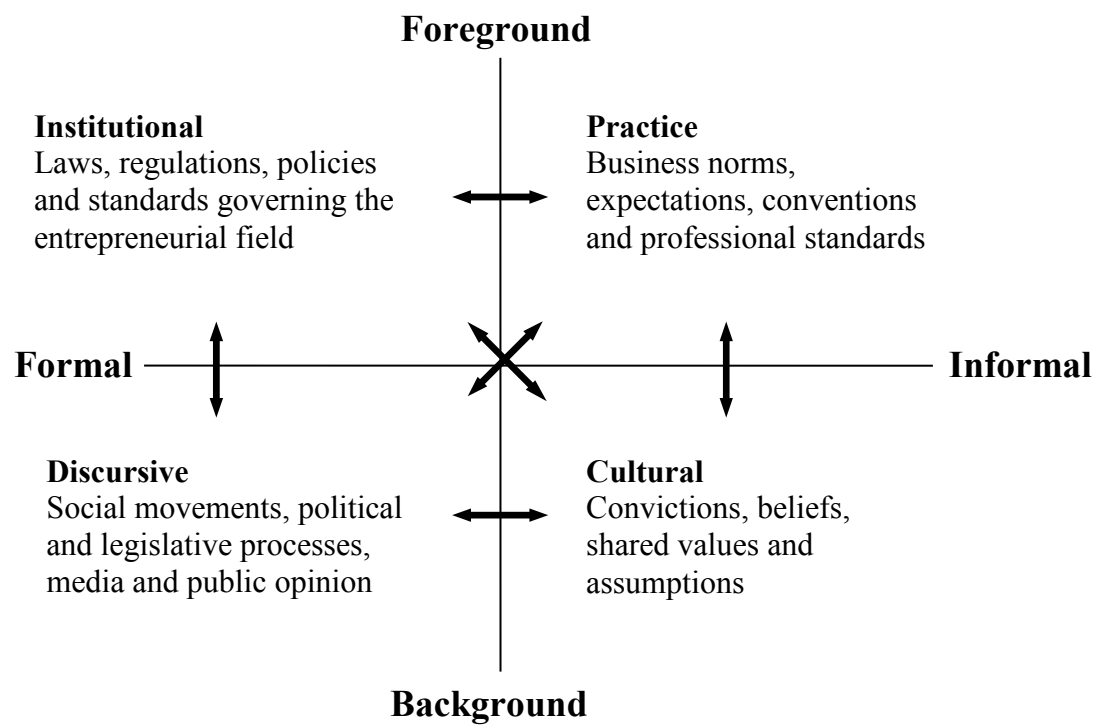


Figure 2: Shaping the entrepreneurial field in pre-independence India

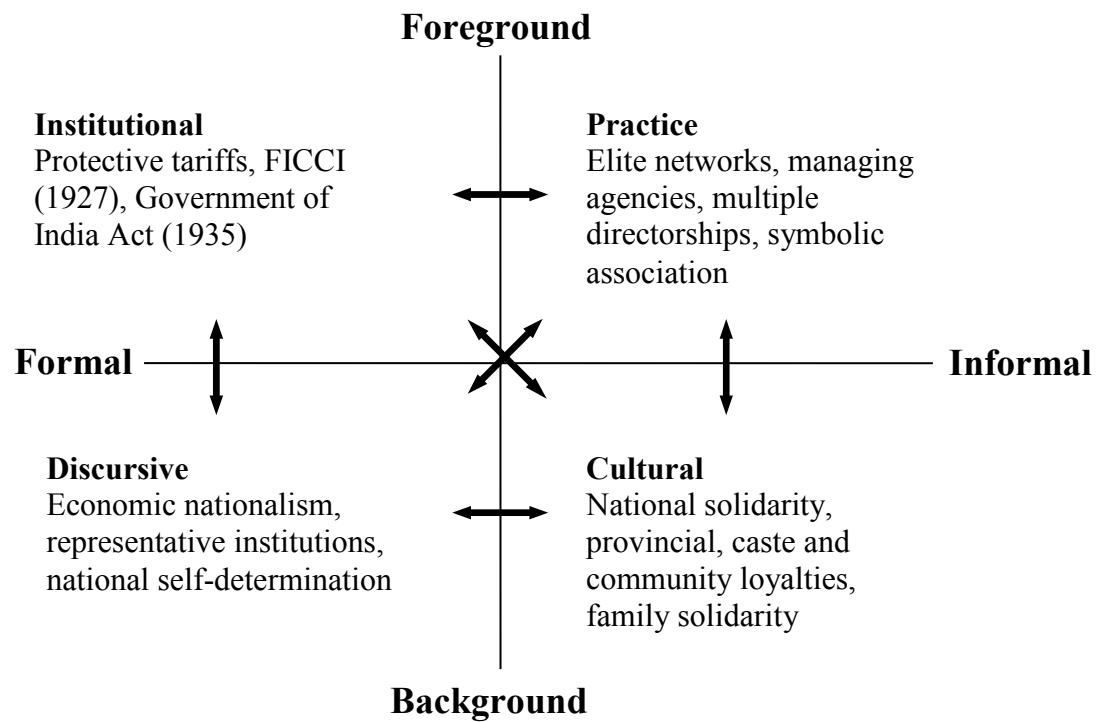


Figure 3: Shaping the entrepreneurial field in post-independence India

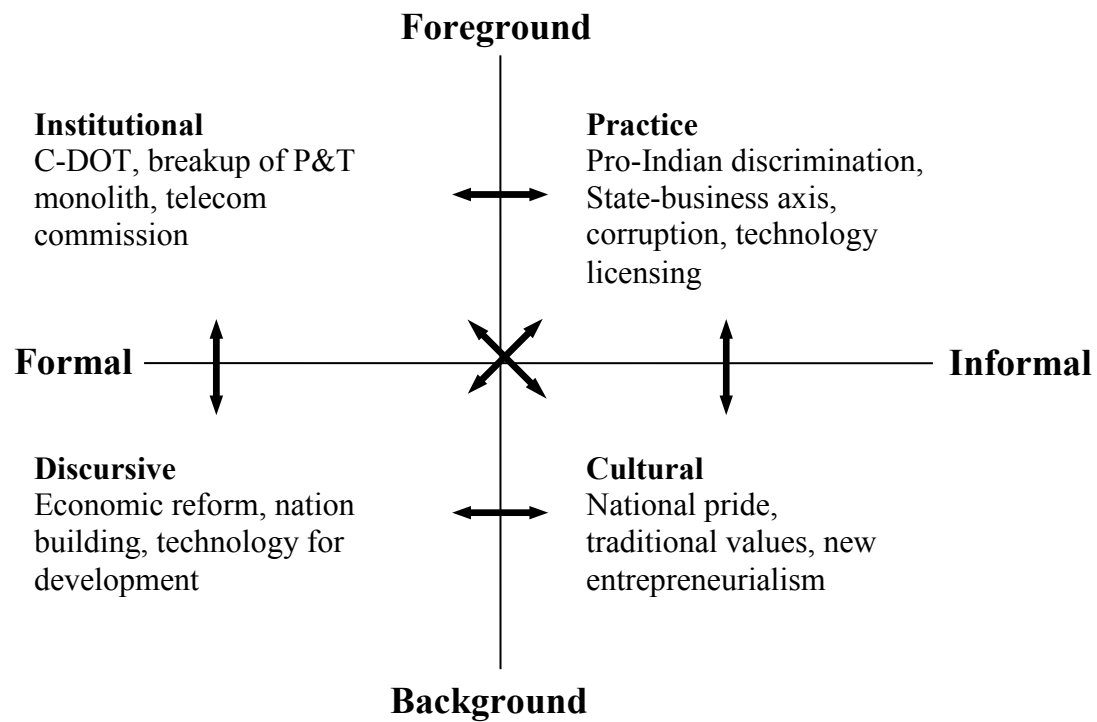
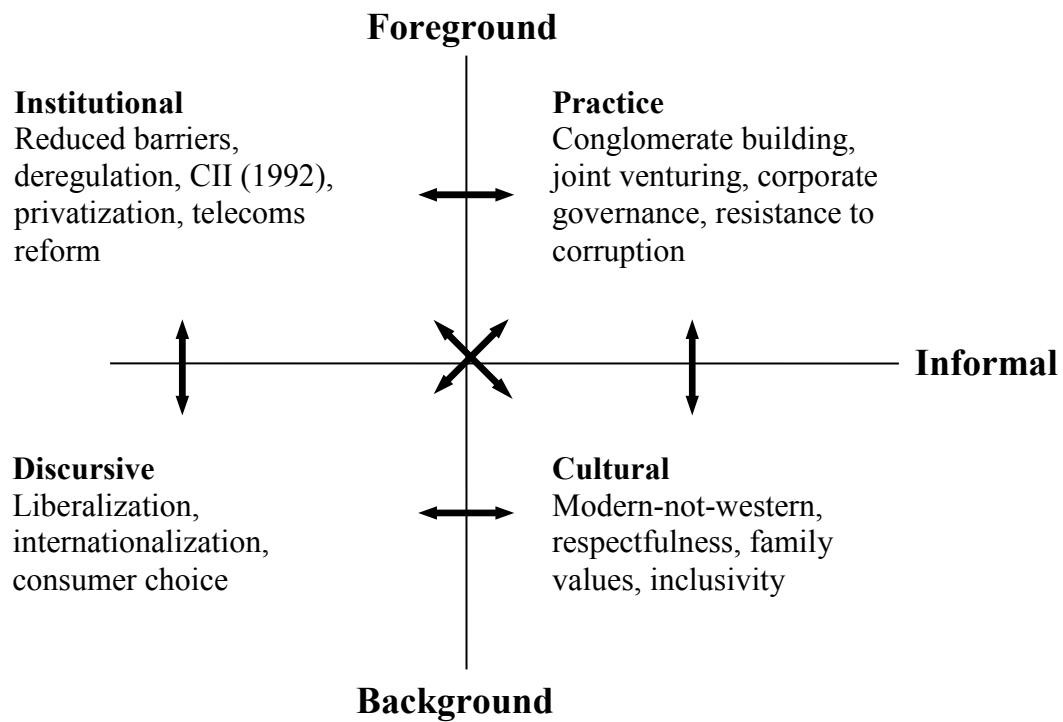


Figure 4: Shaping the entrepreneurial field in post-liberalization India



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